Docket No.: 414.013/09504869 #36

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
James CURRY, et al.

Serial No.: 08/598,457

Filed: February 8, 1996

For: SPATIAL SOUND CONFERENCE SYSTEM AND APPARATUS

Group Art Unit: 2644

Examiner: X. Mei

Atty. Dkt. No.: 414.013/09504869

Mail Stop Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE

Dear Sir:

In response to the Office Action dated May 8, 2003, Applicants respectfully traverse the outstanding rejections of the claims and request reconsideration for the reasons presented herein.

Withdrawal of the prior Final Rejection in response to Applicant's Appeal Brief is acknowledged and appreciated. As a result of the present Action, all claims stand rejected under 35 U.S.C. §103(a) a being obvious over newly identified and applied art. In particular, claims 1 – 27 stand rejected over Begault, Durand R., *3-D Sound for Virtual Reality and Multimedia*, 1994, Adademic Press, Inc., pgs 213 – 216 (hereinafer "Begault") in view of U.S. Patent Nos. 5,105,462; 5,371,799 and 5,436,975 of Lowe et al. (hereinafter "Lowe '462", "Lowe '799", and "Lowe '975", collectively the "Lowe patents").

According to the Examiner:

> *Regarding claims 1- 9 , 12, 15- 1 8 , and 24-26, Begault discloses a computer workstation with 3-D audio for use by a plurality of participants/conferees in teleconferencing environment (spatial audio teleconferencing). Fig. 5.12 on page 215 shows a layout of a conferee with the computer workstation that is inherently including coupling means (conference transmission system) for coupling the apparatus to transmission lines from a far-end conferees located remotely from the conferee (i-e., multiconversation teleconferencing) and with compression unit and decompression unit providing A/V signals compression and decompression at the transmitting end and receiving end of the conference transmission lines, the coupling means including a plurality of ports, each one for receiving audio sound signals from a respective one of the far-end conferees, the conferee being provided with a headphone for receiving spatialized audio signal and to detect direction of origin of a teleconference speaker and route that voice to a speaker of channel in a manner to spatially locate such voice (i.e., virtual sound location) (Begault, pages 213-216). And the computer conference workstation as shown by Begault are generally including video camera for video image capturing, and microphones and loudspeakers for receiving and reproducing audio signals for the respective conferees at the far-end and the near-end.*

Office Action dated May 8, 2003 at page 3.

As an initial matter, it is the position of the undersigned that Begault cannot be properly applied under 35 U.S.C. §103 because it is not enabling, i.e., it describes, in its own words, a "[l]ayouy for a hypothetical GUI for arranging a set of incoming sounds." Begault, caption of Figure 5.12 at page 215. The "Audio Windows" that is a subject of the cited portion of the text is clearly indicated to be a "concept", with no supporting detail provided. The cited portion of Begault amounts to no more than an academic discussion of what could be, a wish-list of features. Even the GUI of Figure 5.12 is merely a general concept; there are no controls shown, no menus, none of the accouterments of a functional GUI. Nor does the cited portion of text provide any details necessary to implement either the Audio Windows concept to which it is directed or, more importantly, the subject matter of Applicants' claims.

For a reference to anticipate or render obvious a claim, it must enable those skilled in the art to practice the claimed invention; Begault fails to give sufficient detail to put even the

described subject matter into the hands of the public, much less the invention of Applicants' claims. The requirement that a reference be enabling is clearly set forth in the M.P.E.P.:

> ***2121.01 Use of Prior Art in Rejections Where Operability Is in Question***
>
> *"In determining that quantum of prior art disclosure which is necessary to declare an applicant's invention 'not novel' or 'anticipated' within section 102, the stated test is whether a reference contains an 'enabling disclosure'... ." In re Hoeksema, 399 F.2d 269, 158 USPQ 596 (CCPA 1968). A reference contains an "enabling disclosure" if the public was in possession of the claimed invention before the date of invention. "Such possession is effected if one of ordinary skill in the art could have combined the publication's description of the invention with his [or her] own knowledge to make the claimed invention." In re Donohue, 766 F.2d 531, 226 USPQ 619 (Fed. Cir. 1985).*

The cited portion of Begault provides no more than a discussion of desired functionality with no description of how such functionality may be achieved. One of ordinary skill in the art would not be put in possession of either the subject matter described nor Applicants' claimed invention by the reference. Accordingly, the rejection under 35 U.S.C. §103(a) is improper and should be withdrawn.

The rejection is further considered to be improper for lack of motivation for making the combination on which the Examiner relies. The Begault text is over 290 pages from which the Examiner selectively cites some four pages as being relevant to the claims of the instant application, and then posits that one skilled in the art would have looked to the teaching of the Lowe patents and modified Begault accordingly:

> *...It would have been obvious to utilize the Lowes' combination in the teleconferencing environment of Begault to actually create a far better localization of audio signals for the conferee with simple amplitude panning. And each of the conferees (at the far-end or near-end) would have a much improved localizing sound system for identifying others in the teleconference because of the better sound localization. Furthermore, the improved teleconference apparatus as taught by the combinations above would have altering or allocating the audio conference signals by of each participant for the entire duration of the teleconference when the improved apparatus is in used....*

Office Action at page 4.

The problem is that such rational constitutes no more than hindsight. All new inventions are new combinations of the old; most provide some advantage over the prior art. However, it is not sufficient to recognize that the combination would provide certain advantages unless such advantages were known in the prior art *because the combination was known*. Here there is no evidence that there was any motivation for making the combination asserted by the Examiner. There is no mention by Begault to utilize a system for localizing various sound signals via signal transmission lines and impart phase variation to such signals to simulate spatial effects. Begault does not mention the desirability of creating an improved localization of audio signal, much less suggest that any such localization be accomplished, as the Examiner asserts, as taught by the Lowe patents.

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." (916 F.2d at 682, 16 U.S.P.Q.2d at 1432.). See also In re Fritch, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992) (flexible landscape edging device which is conformable to a ground surface of varying slope not suggested by combination of prior art references).

It is well established that, even if all aspects of the claimed invention were individually known in the art, such is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). It is, therefore, incumbent upon the Examiner to

provide some suggestion of the desirability of doing what the inventor has done in his formulation, imposition and maintenance of a rejection under 35 U.S.C. 103(a). "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. & Inter. 1985).

Thus, for the reasons presented, the combination of Begault and Lowe is believed to be improper thereby rendering the rejection under 35 U.S.C. §103(a) improper.

Further, even if it were proper to modify Begault to include the teachings asserted to be described by the cadre of Lowe patents, the claimed invention would not result. For example, claim 1 recites:

> 1. A spatial sound conference system comprising:
> a conference station comprising:
> right and left spatially disposed microphones connected to a communications channel for receiving right and left audio signals, wherein the differences between the right and left audio signals represent a head-related transfer function; and
> a remote station comprising:
> right and left spatially disposed loudspeakers connected to the communications channel.

The cited portion of Begault fails to describe right and left spatially disposed microphones connected to a communications channel, while the Lowe patents are directed to processing of a single monaural signal and therefore *teaches away* from the use of right and left spatially disposed microphones. While the Examiner correctly notes that Figure 6 of Lowe '462 shows Dummy Head 605 having left and right microphones 606 and 607, this configuration is not part of the Lowe device but is described as an experiment used in testing the processing

system that is the subject of the disclosure. That is, Lowe describes generating a processed sound through loudspeakers 602 and 603, with Dummy Head 606 being positioned in room 604 in place of of a human subject. Instead, the subject or "Real Listener" is located in room 614. Note that Lowe depicts a direct connection between respective right microphone 607 and right loudspeaker 613 and a similar direct connection between left microphone 606 and left loudspeaker 612. There is no suggestion of using a head-related transfer function as required by claim 1 in this experimental configuration other than as part of the configuration being tested that does not include left and right microphones. Accordingly, the subject matter of claim 1 is not rendered obvious by the combination of Begault and Lowe. To the contrary, the cited references teach away from rather than suggest the claimed subject matter.

Similarly, the subject matter of independent claims 13, 24 and 27 each recite processing two audio signals so as to be represented by a head-related transfer function and, *inter alia*, for the reasons set forth in connection with claim 1, are neither anticipated nor rendered obvious by the combined teachings of Begault and Lowe.

Independent claims 15 and 19, while not requiring two audio inputs, require that an audio signal be processed using a head-related transfer function, the resultant spatialized audio being sent to a receiving station. The cited portion of Begault does not address a head-related transfer function, while Lowe fails to describe or suggest any transmission of audio to a receiving station. The combination therefore also fails to suggest the subject matter of claim 22 which also requires transmitting and audio signal from a transmitting station to a receiving station. Accordingly, the subject matter of claims 15, 19 and 22 are considered to be patentably distinguishable over the asserted combination of references.

For the reasons presented above, independent claims 1, 13, 15, 19, 22, 24 and 27 are each considered to be allowable over the applied art of record and withdrawal of the rejection under 35 U.S.C. §103(a) is respectfully requested.

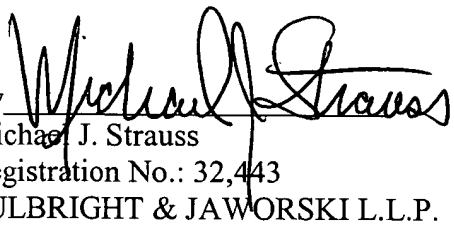
Dependent claims 2-12, 14, 16-18, 20, 21, 25 and 26 are considered to be allowable both as dependent from allowable independent claims and each reciting additional subject matter further distinguishing those claims over the applied art. For example, claim 9 includes a requirement for a video camera and display. The cited art fails to describe or suggest such an element. To the contrary, the GUI described by Begault supports user placement of incoming sounds at random positions about a listener, a feature that would be antithetical to an environment wherein a participant would be watching conferees on a video monitor. While the Examiner has taken the position that such video equipment is well known, this does not render its use obvious when used in combination with the claimed spatial sound conferencing system and method.

For the reasons presented, the rejection of all claims under 35 U.S.C. §103(a) is considered to be improper and withdrawal thereof together with an early notification of allowability are respectfully solicited.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 06-2375, under Order No. 414.013/09504869 from which the undersigned is authorized to draw.

Dated: August 8, 2003

Respectfully submitted,

By 

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TRANSMITTAL

Dear Sir:

Applicant respectfully submits the following for filing in the above-identified application:

Response.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 06-2375, under Order No. 414.013/09504869 from which the undersigned is authorized to draw.

Dated: August 8, 2003

Respectfully submitted,

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